# Draft Prospectus Petersen Ranch Conservation/Mitigation Bank

Leona Valley, Los Angeles County, California

# Prepared For:

Interagency Review Team

# **Bank Proponent:**

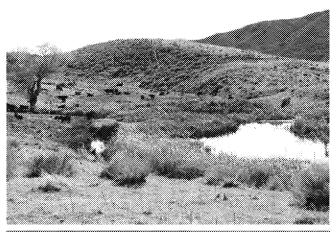
Land Veritas Corp 1001 Bridgeway #246 Sausalito, CA 94965 (415) 332-6530 Contact: Tracey Brownfield tracey@tbdevelopment.com

# Consultant:

WRA, Inc. 2169-G E. Francisco Blvd San Rafael, CA 94901 (415) 454-8868 Contact: Tim DeGraff degraff@wra-ca.com

#### Date:

August 2012









# TABLE OF CONTENTS

1.0 Introd	luction	1
2.0 Site D	Description	
2.1	Hydrology and Topography	
2.2		
	2.2.1 Soils and Farmlands	
	2.2.2 Vegetation Communities	
	2.2.3 Aquatic Communities	
	2.2.4 Special Status Species: Plants	
	2.2.5 Special Status Species: Wildlife	
2.2	2.2.6 Wildlife Corridors	
2.3 2.4	J W	
2.4		
2.0	2.5.1 Mineral Rights	
	2.5.2 Water Rights	
	3	
3.0 Propo	osed Mitigation/Conservation Activities	8
4.0 Bank	Crediting Scenarios	9
4.1	Aquatic Resources	
	4.1.1 Aquatic Resources Upland Buffers	9
4.2		
4.3	·	
	4.3.1 Swainson's Hawk	
	4.3.2 Burrowing Owl	
	4.3.3 California Red-Legged Frog	
	4.3.4 Tri-colored Blackbird	
	4.3.5 Other Special Status Species	12
5.0 Credi	iting Methodology	12
6.0 Propo	osed Service Areas	13
6.1	Wetland, Stream, Riparian Service Areas	
	6.1.1 Santa Clara River Watershed Service Area	
	6.1.2 Antelope-Fremont Valley Watershed Service Area	
6.2	CEQA Sensitive Habitats	14
	6.2.1 Agricultural Soils	
6.3		
6.4	<b>9</b>	
6.5		
6.6	Tri-Colored Blackbird	
7.0 Bank	Operation	
7.1	Credit Approvals and Accounting	
7.2		
7.3	Bank Ownership	15
8.0 Projec	cted Regional Demand	16
•	ences	
J.U KEIER	CHOCS	1

## Appendix A - Figures

- Figure 1 Proposed Bank Location Map
- Figure 2 Aerial Photograph of Proposed Bank
- Figure 3 Watersheds of Proposed Bank
- Figure 4 SUURGO soils map
- Figure 5 Agricultural Prime Farmlands
- Figure 6 Vegetation Communities
- Figure 7 Aquatic Communities
- Figure 8 Special Status Species: Plants
- Figure 9 Special Status Species: Wildlife
- Figure 10 Swainson's Hawk Foraging Areas
- Figure 11 Wildlife Corridors and Special Ecological Areas
- Figure 12 Mineral Rights Easement Map
- Figure 13a Proposed Bank Crediting Concept
- Figure 13b Proposed Bank Crediting Concept
- Figure 14 Wetland Service Areas
- Figure 15 CEQA Service Area
- Figure 16 Swainson's Hawk Service Area
- Figure 17 Burrowing Owl Service Area
- Figure 18 California Red-Legged Frog Service Area
- Figure 19 Tri-Colored Blackbird Service Area
- Figure 20 Bank Phasing Map

# Appendix B – Plotted Easements Map

#### 1.0 INTRODUCTION

The following draft prospectus is for the Petersen Ranch Mitigation and Conservation Bank (Proposed Bank) located in an unincorporated area of Los Angeles County (**Figure 1**). The property consists of 94 parcels, totaling approximately 3905.4 acres. The Proposed Bank sponsor is Land Veritas Corp. (Sponsor).

WRA, Inc., Land Veritas' consultant, has conducted a number of preliminary site visits to assess vegetation types, habitats, and wildlife present within the Proposed Bank. The Proposed Bank proposed to offer credits to offset impacts regulated by the following regulatory programs:

- Section 404 of the Clean Water Act
- Section 401 of the Clean Water Act
- Section 1602 of the California Lake and Streambed Code
- Porter-Cologne Water Quality Control Act
- Section 7 and 10 of the Federal Endangered Species Act
- California Endangered Species Act
- California Environmental Quality Act

Therefore, the Sponsor is proposing that the Army Corps, Environmental Protection Agency, Los Angeles and Lahontan Water Quality Control Boards, California Department of Fish and Game, and, potentially, United States Fish and Wildlife Service be signatories to the Proposed Bank.

#### 2.0 SITE DESCRIPTION

The Proposed Bank is a 3905.4 acre property located in the Lake Hughes USGS quadrangle adjacent to the Angeles National Forest (ANF) (Figure 2), across 94 parcels. The site is located in the Leona Valley within the proposed San Andreas Rift Zone Significant Ecological Area (SEA) and includes a portion of Portal Ridge, north of Leona Valley. The site drains to two watersheds with the western portion of the site draining into the Santa Clara River watershed and the eastern portion draining into the Antelope-Fremont Valley watershed, encompassing over 3.3 million acres. The property is topographically and biologically diverse, featuring many miles of valleys, streams and dry washes and expansive areas of rolling hills and steep canyons. The property supports a suite of transitional habitat types between the more arid regions of the Antelope Valley to the north, and the more mountainous regions of the ANF to the south, with dominant vegetative communities that include annual grasslands. mixed chaparral, buckwheat, rabbitbrush, basin sagebrush, Fremont cottonwood, California juniper, chamise, riparian mixed shrub, willow shrub, wetlands, and agricultural uses. Several sensitive wildlife species are known from this vicinity including Swainson's hawk. Tehachapi pocket mouse, coast horned lizard, western pond turtle, american badger, burrowing owl, California red-legged frog, twostriped garter snake, and mountain plover. Sensitive plant species include Peirson's morning glory, round leaved fillaree, San Fernando Valley spineflower, short-jointed beavertail, and slender mariposa lily. Focused surveys have not yet been conducted within the Proposed Bank; however, the site supports suitable habitat for many sensitive plant and wildlife species.

#### 2.1 Hydrology and Topography

Elevations within the Proposed Bank range from approximately 3,200 to 3,990 feet in elevation. The western portion of the Proposed Bank represents the extreme headwaters of the Santa Clara watershed and originates from the wetland and riparian complex in the central portion of the Proposed Bank. The valley is a rift valley created by the San Andreas fault and contains numerous low-lying wetland and naturally ponded areas called sag ponds. The eastern portion of the Proposed Bank general drains from higher slopes and either flows directly into the Antelope Valley or into Amargosa

Creek. (**Figure 3**). Slopes range from 15 - 20% from the ridges to the north and south, and less than 4% along the valley floors.

The Proposed Bank, and in particular the valley floor, has been modified and disturbed since the 1800's from the construction of roads, cattle grazing, agricultural activities, and buildings. Historically, runoff was concentrated into the steep canyons and was released onto the valley over large alluvial fans that consist of mixed cobbles and sand in braided channels vegetated with mixed sage scrub habitats. These flows eventually collected in the low-lying sag ponds that were bordered by wetland vegetation, riparian habitats and in some cases large bodies of open water. These ponds can be augmented by water supplied from the Lake Elizabeth Mutual Water Company (LEMWC), pumped onsite via a network of water pipes.

# 2.2 Biological Resources

#### 2.2.1 Soils and Farmlands

SSURGO Soil Types

The Proposed Bank includes a variety of soil types across the site. See Table 1 below, and Figure 4.

Table 1. Soil Types

Soil Type	Acreage	Distribution on Site
Amargosa Series. Rocky coarse sandy loam, 9 to 55 percent slopes, eroded	710.01	Primarily NE portion of the property, along north facing slopes and ridgelines.
Castaic-Balcom Series. Silty Clay Loam. 9 to 50 percent slopes, eroded.	197.49	SE portion of the site, southern facing slopes.
Chino loam	127.34	Valley floor.
Gaviota Series. Rocky Sandy Loam. 15 - 30 percent slopes, eroded.	97.34	Various locations along southern facing slopes.
Greenfield sandy loam. 2 to 9 percent slopes	153.03	Various locations along valley floor and lower slopes.
Hanford Series. Gravely, Coarse Sandy Loam. 2 - 15 percent slopes.	662.43	Large portions of property on lower and moderate slopes, and along the valley floor.
Millsholm Series. Rocky Loam. 15 - 50 percent slopes, eroded.	358.34	Isolated, linear distribution along upland hillside in SW portion of the property.
Ramona Series. Coarse Sandy Loam. 5 - 30 percent slopes, eroded.	119.90	Various dispersed locations in western and southern portions of the property.
Vista Series. Coarse Sandy Loam. 9 - 50 percent slopes, eroded.	1391.33	Largest distribution at property, located across through the center of the property and encompassing most of the southern facing slopes of the Portal Ridge in the northern portion of the site.

Soil Type	Acreage	Distribution on Site
Yolo loam 2 to 9 percent slopes	76.55	Small, isolated locations in the far western, and southern extents of the property.
Water	11.64	Ponded locations along the valley floor.
TOTAL ACRES	3905.4	

Source: USDA 2006.

#### Prime Farmland

The Proposed Bank includes large amounts of land designated as Farmland of Statewide Importance (376.9 acres), Prime Farmland (if irrigated, 890.3 acres), and Prime Farmland (if irrigated and drained, 127.3 acres), located in the valley floor and downslope areas throughout the property. See **Figure 5.** 

# 2.2.2 Vegetation Communities

The Proposed Bank is primarily characterized by annual grassland, mixed chaparral, buckwheat, rabbitbrush, and basin sagebrush. A number of important vegetation communities are located in various parts of the site, including Fremont cottonwood along the valley floor, mixed riparian shrub in the central and northeastern portions of the Proposed Bank, willow shrub surrounding water features, and agriculture (alfalfa) in the center of the property. See **Figure 6** for a map of the vegetation types found within the Proposed Bank, and **Table 2** below summarizing these communities.

**Table 2. Vegetation Communities** 

Vegetation Community	Acreage	Distribution on Site
HG: Annual Grasses and Forbs	1257.9	Widely distributed across the property.
CQ: Lower Montane Mixed Chaparral	1007.7	Widely distributed across the northern portion of the property, along the northern Portal Ridge portion of the property.
SB: Buckwheat	992.6	Widely distributed across the northern portion of the property, along the northern Portal Ridge portion of the property.
BR: Rabbitbrush	319.0	Interspersed across the property, adjacent to the valley floor, and southern portion of the property.
BX: Great Basin - Mixed Chaparral Transition	114.7	Concentrated in central portion of the site, south of the valley floor, along the lower southern slopes
BS: Basin Sagebrush	89.0	Concentrated in central portion of the site, south of the valley floor, along the lower southern slopes
UB: Urban	21.0	Developed areas near the Ranch House, and the Equestrian Center.
WA: Water	17.0	Ponded locations along the valley floor.
BA: Barren/Rock	14.1	Interspersed outcroppings throughout the property, along the valley floor.
QF: Fremont Cottonwood	11.8	Interspersed locations, including the western extent of the property, and along the valley floor adjacent to water features.
IG: Non-Native/Ornamental Grass	11.3	Isolated location at western extent of property.
JC: California Juniper (shrub)	10.9	Isolated location in NE portion of property.

Vegetation Community	Acreage	Distribution on Site
NM: Riparian Mixed Shrub	10.5	Isolated location at in central and NE portion of property.
WL: Willow (Shrub)	7.9	Isolated location surrounding water feature in SE portion of the property.
IH: Non-Native/Ornamental Hardwood	5.2	Stand of ornamental trees adjacent to Ranch House access road, south of Johnson Road in NW portion of the property.
A6: Pastures and Crop Agriculture	4.5	Isolated alfalfa crop in central portion of the property.
HJ: Wet Meadows	4.2	Isolated features in southern extent of property.
CT: Tucker Scrub Oak	3.4	Isolated in northern portion of the property.
IB: Urban - related Bare Soil	2.7	Isolated location in NE portion of property.
TOTAL ACRES	3905.4	

Source: CALVEG 2007.

#### 2.2.3 Aquatic Communities

Although detailed field surveys have not yet been conducted within the Proposed Bank, an analysis of aerial photography, topography, and general field observations indicates that it includes a large amount of wetland and stream features, as shown in **Figure 7**. WRA estimates that almost 100 acres of wetland features exist along the valley floor, including a network of natural sag pond features, and manmade ponds for grazing cattle. Based on the analysis of aerial photography, topography and USGS stream line data, WRA estimated that approximately 178,500 linear feet of stream features exist at the Proposed Bank, much of which may include adjacent riparian vegetation.

#### 2.2.4 Special Status Species: Plants

Protocol-level plant surveys have not yet been completed; however an initial assessment of the Proposed Bank was conducted and the California Natural Diversity Database (CNDDB) was reviewed. Based upon the data reviewed, the Proposed Bank has a high potential to support several sensitive plant species which have been documented within five miles of the Proposed Bank (**Figure 8**) and have habitat requirements that are supported by conditions within the Proposed Bank. These species are: Peirson's morning glory (Calystegia peirsonii, CNPS List 4), round leaved fillaree (California macrophylla, CNPS List 1.B), San Fernando Valley Spineflower (Chorizanthe parryi var. fernandina, CNPS List 1.B, State Endangered), short-jointed beavertail (Opuntia basilaris var. brachyclada, CNPS List 1.B), and slender mariposa lily (Calochortus clavatus var. gracilis, CNPS List 1.B)

Of the above species, Peirson's morning glory has been found within the western extent of the Proposed Bank, and along the southern boundary along Lake Elizabeth Road (See **Figure 8**). Two other species have been observed immediately adjacent to the west of the Proposed Bank, near Elizabeth Lake: San Fernando Valley spineflower and round-leaved filaree. San Fernando Valley spineflower is a State Endangered species and while the known nearby occurrence is assumed to be extirpated (CNDDB), focused surveys have not yet been conducted on the property.

In addition, a regionally rare sagebrush (*Artemisia tridentata var. tridentata*) was documented onsite in the San Andrea Rift Valley along the edge of the wetland complex.

#### 2.2.5 Special Status Species: Wildlife

#### CNDDB Special Status Occurrences

Several special status wildlife species have been documented or have high potential to occur within the Proposed Bank based upon assessment of the CNDDB and historic sightings. Within five miles of the Proposed Bank (Figure 9) the following special status species have been documented in CNDDB: Tehachapi pocket mouse (Perognathus alticolus inexpectatus, DFG Species of Special Concern), coast horned lizard (Phrynosoma blainvillii, DFG Species of Special Concern), western pond turtle (Emys marmorata, DFG Species of Special Concern), American badger (Taxidea taxus, DFG Species of Special Concern), burrowing owl (Athene cunicularia, DFG Species of Special Concern), California redlegged frog (Rana draytonii, DFG Species of Special Concern), two-striped garter snake (Thamnophis hammondii, DFG Species of Special Concern), and mountain plover (Charadrius montanus, DFG Species of Special Concern), Bell's sage sparrow (Amphispiza belli belli, DFG Watch List), Southern California rufous-crowned sparrow (Aimophila ruficeps canescens, DFG Watch List), ferruginous hawk (Buteo regalis, DFG Watch List). Many of these species have been documented in or around the Proposed Bank, and at Elizabeth Lake, nearby to the west. Anecdotal evidence in area news sources and websites indicates that several other migratory birds and bats utilize the habitats near the Proposed Bank, and nearby Elizabeth Lake including the bald eagle (Haliaeetus leucocephalus, State Endangered).

## Swainson's Hawk (Buteo swainsoni)

The Swainson's hawk is listed as a California state threatened species under the California Endangered Species Act (CESA). Swainson's hawks are known to breed surrounding the agricultural areas and native grasslands in the Antelope Valley region, including a documented nesting location approximately two miles north of the Proposed Bank (See **Figure 10**). Biologists have confirmed several sightings of Swainson's hawk on the Proposed Bank and its suitability for Swainson's hawk foraging habitat was confirmed by Peter Bloom, a renowned raptor ecology expert.

The wetland features along the valley bottom support large patches of dense vegetation which are likely to concentrate small mammals and invertebrate prey during summer months. Also present is a four and a half -acre field of irrigated alfalfa along the valley floor near the geographic center of the Proposed Bank. As the valley slopes up to the north and south, gradual to moderate slopes are dominated by annual grasslands, sagebrush scrub, buckwheat and rabbitbrush. The site's grasslands, agricultural fields, pasture and low density savanna and scrub habitats provide moderate to high quality foraging habitat for Swainson's hawk, while the higher density scrub and woodland habitats provide marginal Swainson's hawk foraging habitat (Woodbridge 1998).

Impoundments along the valley floor have formed multiple ponds that support intermittent dense willow thickets and several isolated mature cottonwoods. These riparian habitats provide high quality nesting habitat for Swainson's hawk given the proximity of foraging habitat, and the site's location within five miles of other documented nest sites.

#### 2.2.6 Wildlife Corridors

The Proposed Bank is located between ANF lands to the north and south and is also located within the San Andreas Rift Valley. The San Andreas Rift Valley provides an important ecological function in the region supporting numerous aquatic habitats and a great diversity in plant and wildlife. The Proposed Bank property supports an important link for wildlife movements between the large block of open space in the ANF and the valuable water sources in the San Andreas Rift Valley. Los Angeles County has also proposed establishing the Portal Ridge/Liebre Mountain SEA which is an important biodiversity region in Los Angeles County that extends northwest from the Proposed Bank, and provides habitat connectivity for other biological hotspots within the County. The Proposed Bank offers an important connection between the ANF in the south and the SEA in the north. **Figure 11** illustrates the known wildlife corridors in the area, in relation to SEAs areas in the surrounding region.

Wildlife movement between suitable habitat areas can occur via landscape linkages and wildlife movement corridors. For the purpose of this analysis, the term "landscape linkage" is used in a regional planning context, as a broad-scale mapping of natural habitat that functions to join two larger habitat blocks. The term "wildlife corridor" is used herein in the context of smaller scale, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Corridors and linkages vary by species due to their unique habitat requirements, life histories, size, tolerance of disturbance, and movement patterns. Because the ideal corridors can vary by species, wildlife movement is typically analyzed based on suitability for several focal species.

At the landscape linkage scale, the Proposed Bank is located within the Castaic Range and lies at the intersection of the San Gabriel Mountains to the east, the Sierra Madre Mountains to the west, and the Tehachapi Mountains to the north. The Tehachapi range is the only intact wildlife corridor that connects the Coast Range, by way of the Sierra Madre Mountains, to the Sierra Nevada Mountains. As stated above, the Proposed Bank also falls within the San Andreas Rift Zone SEA as designated by the Draft County of Los Angeles General Plan. The San Andreas Rift Zone SEA connects the Portal Ridge/Liebre Mountain SEA and the Tehachapi Foothills SEA. The San Andreas Rift Zone SEA supports a high diversity of vegetation communities because of its varied topography, elevation, and relatively low density urban development. Finally, the Proposed Bank is located in the immediate vicinity of some of the few terrestrial passages over the California aqueduct. This man made barrier is impacting wildlife movement at the landscape level and it is critical to secure open space around the passages so they can play their role as wildlife corridors (See **Figure 11**.)

The San Andreas rift zone is so named because it lies along the San Andreas Fault. Geologic activity along the fault has created a linear series of lakes, sag ponds, and wetlands nearly 50 miles long from Palmdale Lake in the east to Castiac Lake in the west. This is likely an important stopover point for migrating waterfowl and riparian nesting birds—including southwestern willow flycatcher. Additionally, the areas in which water is abundant provide year-round forage for herbivores, aggregation of vertebrate prey for predators, and watering locations for all species of wildlife.

The Proposed Bank is also situated between large tracts of preserved public and private lands. The southern portion of the Proposed Bank directly abuts and is effectively a continuation of the ANF and is in the immediate vicinity of the proposed Tule Wilderness Area, further enhancing the landscape linkage function of the area. Tejon Ranch is the largest privately owned, contiguous land holding in California and is located approximately 15 miles northwest of the Proposed Bank via Portal Ridge. The Tejon Ranch Conservancy is proposing to protect 240,000 acres of the site in perpetuity. Further to the west, is Los Padres National Forest.

At the wildlife corridor scale, as defined above, the Proposed Bank contains few barriers to local wildlife movement. The principal habitat corridor within the Proposed Bank occurs along the valley floor. The

local topography, perennial sources of water, and riparian woodland all trend in an east-west direction providing connectivity to lands adjacent to the Proposed Bank. Woodland, chaparral, and scrub habitats in the higher-elevation portions of the Proposed Bank are also contiguous with such habitats in the surrounding land parcels.

# 2.3 Site History and Surrounding Land Uses

The Proposed Bank property borders the ANF to the southwest, residential development to the southeast, and the residential and recreational areas in and near the community of Elizabeth Lake to the west. The only known historic use of the Proposed Bank has been cattle grazing and recreational hunting. There are several houses, associated structures, and a skeet shooting range off the entrance driveway from Johnson Road. These structures will be excluded from the conservation easement and will not be included in the Proposed Bank.

#### 2.4 Zoning and Land Use

The Proposed Bank is located in an unincorporated section of Los Angeles County and is zoned "A-2: Heavy Agricultural". Land uses at the property include agricultural (grazing, alfalfa cultivation), open space, and recreational uses. The Los Angeles County Town and Country Plan designates the Proposed Bank as "RL40 - Rural Land 40 (1 du / 40 ac)". The Antelope Valley Area Plan designates the Proposed Bank as "N-1 — Non Urban". These zoning and land use designations are compatible and would be conducive to maintaining the property as open space, for the creation of the Proposed Bank.

# 2.5 Existing Easements and Encumbrances

Preliminary Title Reports have been obtained and reviewed by the Sponsor. According to property records, the Proposed Bank has a number of easements established onsite. See **Appendix B** for detailed maps of the easements within the Proposed Bank. At this time, it does not appear that there are any existing easements or encumbrances associated within the Proposed Bank that would conflict with the establishment of a mitigation/conservation bank on the property.

Road easements exist on a number of parcels across the property. Elizabeth Lake Road is a public road that primarily delineates the southern boundary, and the western edge of Proposed Bank. Johnson Road runs through the north-central region of the Proposed Bank. These roads are not a part of the Proposed Bank and are managed by Los Angeles County. A number of easements for future streets are recorded in the northern portion of the Proposed Bank (Parcel 13), associated with previously planned residential development. However, no residential development is planned at this time and these easements can be quitclaimed by the Sponsor. The easements will only be quitclaimed upon significant progress towards agency approval of a mitigation/conservation bank. Other dirt roads, and right of way easements exist in a variety of locations, as shown in **Appendix B**.

Utility easements exist within the Proposed Bank in a number of locations. The Barren Ridge and Tehachapi Renewable Transmission lines transect the Proposed Bank from the north to the south, and include a combination of easements for unpaved access roads, utility poles, and high voltage power lines.

None of the existing easements within the Proposed Bank are extensive nor would they affect the conservation value of the property.

#### 2.5.1 Mineral Rights

There are 8 parcels with partial or full sub-surface mineral rights extraction easements. These easements do not grant surface entry, or entry above 500 feet below surface. The largest of these

parcels include those located at the northern extent of the Proposed Bank, north of Johnson Road (Figure 12). Furthermore, according to the Remoteness Opinion prepared by GeoResource Management (2012) for the Proposed Bank, there is no risk of surface impact to the Proposed Bank, since there is no commercial feasibility for mineral resource extraction at the site.

All parcels within the Proposed Bank retain surface mineral rights. Since the Sponsor can prohibit surface right of entry and the Remoteness Opinion determined that there is no commercial viability for mineral extraction at the site, there are no mineral rights issues that would affect the conservation value of the property.

#### 2.5.2 Water Rights

The Sponsor retains all surface water rights across the property. Additionally, the property owner has substantial stock in, and sufficient water rights to ensure water supply from, the Lake Elizabeth Water Company (LEMWC). These water supply rights ensure sufficient water supply to continue maintenance of the existing ponds on site. This water supply is an extremely unique resource in this area and is not subject to the ongoing water rights adjudication within the Antelope Valley groundwater basin.

The Sponsor plans on allocating enough water rights to the Proposed Bank to allow operations in perpetuity. The Sponsor will retain any additional water rights not required for the operation and maintenance of the Proposed Bank.

#### 3.0 PROPOSED MITIGATION/CONSERVATION ACTIVITIES

The following actions are proposed to be implemented within the Proposed Bank in order to generate credits:

- Cattle exclusion and management within existing wetland and riparian habitats
- Removal of selected berms/dams to restore wetland hydrology in San Andreas Rift Valley wetland complex
- Non-native invasive plant eradication and management within aquatic and upland habitats.
- Implementation of site-wide grazing program meant to manage the Proposed Bank for plant diversity and native species and not for cattle production
- Excavation of selected areas to establish new wetland habitats in the San Andreas Rift Valley
- Planting of riparian vegetation in order to establish new riparian woodland habitats within the Proposed Bank
- Management and monitoring of the small mammal population to help sustain burrow density for burrowing owls and prey base for Swainson's hawk
- Potential installation of artificial burrows to help increase burrowing owl population onsite
- Management and monitoring of the rare plant populations in order to maintain and increase the population densities onsite.
- Potential translocation of California red-legged frog egg masses onsite in order to establish a population onsite
- Subsequent management of aquatic predators such as bullfrogs and African clawed frogs
- Monitoring of the Proposed Bank to limit trespassing and other activities prohibited by the conservation easement
- Establishment of permanent conservation easement to protect the site in perpetuity
- Funding of long-term endowment to support perpetual management and monitoring

#### 4.0 BANK CREDITING SCENARIOS

Several types of credits are proposed to be developed for sensitive habitats and special status species in the Proposed Bank. These include wetlands, stream, riparian, desert wash, native grassland, prime farmland, sagebrush scrub, mixed chaparral, juniper woodland, and credits for sensitive species including Swainson's hawk, burrowing owl, and potentially California red-legged frog. These credits are discussed in more detail in the following sections.

#### 4.1 Aquatic Resources

It is proposed that habitat preservation, enhancement, restoration, and establishment credits be generated for aquatic habitats. Preservation credits would be comprised of high quality areas that are currently fully functioning. These areas would be managed to ensure that they continue to provide functional support to the watershed.

Enhancement credits would be generated by improving degraded habitats that currently exist. One example would be to reduce cattle influence within the San Andreas Rift Valley wetland complex. This could be implemented by excluding cattle during most of the year and implementing non-native weed control within the wetland habitats.

Restoration credits would be comprised of areas that historically supported intact sensitive communities but currently consist of degraded wetlands, streams, riparian habitats, non-native grasslands, or ruderal communities. The Proposed Bank will restore these areas to their historic functional and diverse native communities in order to generate restoration credits.

Establishment credits will primarily be sought for wetland and riparian habitats. Wetland establishment credits would be generated primarily in the San Andreas Rift Valley. Degraded uplands immediately adjacent to the wetland complex would be excavated to an appropriate level sufficient to expand the wetland hydrology in specific areas. The excavated areas would then be planted with native wetland plants and managed in a similar manner as the adjacent wetlands.

Riparian establishment will also occur along the edges of the wetland complex but also along existing drainages. Native riparian species will be planted and temporary irrigation will be installed. In addition, the planted areas will be fenced to preclude cattle grazing until such time that the riparian habitats mature sufficiently.

#### 4.1.1 Aquatic Resources Upland Buffers

One of the primary benefits of preserving a large site such as the Proposed Bank is that it can provide watershed integrity for the onsite aquatic resources. The Proposed Bank would protect critical headwaters and unique aquatic habitat in both the Santa Clara and Antelope Valley watersheds. Protection of the adjacent uplands is vital to sustain the onsite aquatic resources in perpetuity. Therefore, wetland, riparian, stream, and desert wash upland buffer credits are also proposed to be included in the Proposed Bank.

# 4.2 CEQA Sensitive Habitats

The extent of CEQA sensitive habitats will be mapped during the biological resources inventory. Credits will be generated by preserving, enhancing, and restoring the identified sensitive habitats onsite. The following sensitive communities and credit types are anticipated to be present within the Proposed Bank:

- Native grasslands
- Sagebrush scrub

- Juniper woodlands
- Mixed chaparral
- Riparian woodlands
- Oak woodlands
- · Riparian scrub and woodlands
- Wetlands
- Alluvial fan sage scrub
- Agricultural soils

Detailed community mapping will be conducted as part of the biological resources inventory. Subsequently, the proposed credit types will be refined and depicted in the Final Prospectus.

# 4.3 Species Credits

#### 4.3.1 Swainson's Hawk

CDFG has recently published mitigation measures for renewable energy projects in the Antelope Valley of Los Angeles and Kern Counties (CDFG 2010). These mitigation measures were developed due to the extensive renewable energy development occurring within the Antelope Valley. Furthermore, the population of Swainson's hawks within the Antelope Valley is small (approximately 10 breeding pairs) and is presumed to be genetically isolated from other populations in California. Therefore, the loss of nesting and foraging habitat within the Antelope Valley could lead to the extirpation of the Swainson's hawk Antelope Valley population. Therefore, CDFG is requiring that impacts to Swainson's hawk nesting and foraging habitat be mitigated within the Antelope Valley Swainson's hawk breeding range.

CDFG (2010) requires that the loss of Swainson's hawk foraging habitat be mitigated at a minimum 2:1 ratio for such habitat impacted within a five mile radius of an active Swainson's hawk nest. Mitigation lands for Swainson's hawk must meet the following criteria:

- Moderate to good quality with a capacity to improve in quality and value to Swainson's hawk
- Must be within the Antelope Valley Swainson's hawk breeding range
- Foraging habitat with suitable nest trees is preferred
- Fee title must be transferred to CDFG or a conservation easement must be recorded on the property
- Long-term management funds must be provided to manage and monitor the site in perpetuity

The Proposed Bank will meet all of the requirements above. The majority of the Proposed Bank is within a five-mile radius of an active nest and the entire property is within the Antelope Valley Swainson's hawk breeding range (**Figure 10** and **Figure 16**). In addition, the Proposed Bank supports moderate to good foraging habitat that can be improved and contains extensive nest trees. Furthermore, Swainson's hawks have been observed foraging within the Proposed Bank. Therefore, it is proposed that the entirety of the Proposed Bank be considered Swainson's hawk foraging habitat.

## 4.3.2 Burrowing Owl

CDFG has also recently published a staff report describing the habitat, potential threats, and mitigation measures for burrowing owl (CDFG 2012). This report defines burrowing owl habitat as short or sparse vegetation (at least at some time of the year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey within close proximity to the burrows.

Mitigation for permanent impacts to burrowing owl habitat must replace nesting burrows, occupied burrows, satellite burrows and/or burrowing owl habitat based upon a site specific analysis of the

impact and mitigation site. CDFG recommends that mitigation lands should be on, adjacent, or proximate to the impact site where possible and consist of habitat that is sufficient to support burrowing owls. CDFG also allows the purchase of conservation bank credits as long as the bank's service area covers the impact site.

A large portion of the Proposed Bank meets the burrowing owl habitat definition and would meet the criteria for providing suitable mitigation habitat. Protocol-level surveys for burrowing owl have not been performed; however, ranch managers who have been working on the Proposed Bank for decades have reported burrowing owls on the property.

Protocol-level surveys and a habitat assessment will be conducted as part of the Final Prospectus. Subsequently, the size of the onsite population and extent of suitable habitat will be quantified.

#### 4.3.3 California Red-Legged Frog

WRA conducted several passive surveys for California red-legged frog in early 2012 and did not find this species within the Proposed Bank. However, there is extensive habitat onsite for this species and there appears to be no aquatic predators such as bullfrogs or African clawed frogs. The numerous ponds scattered throughout the property, extensive wetlands throughout the San Andreas Rift Valley, and adjacent upland habitats provide all the Primary Constituent Elements necessary to support a population of this species. This includes aquatic and upland areas where suitable breeding and hibernate nonbreeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat.

The Proposed Bank includes several potential breeding locations, a permanent water source, and associated uplands surrounding these water bodies up to 300 feet from the water's edge, all within 1.25 miles of one another and connected by barrier-free dispersal habitat that is at least 300 feet in width.

In addition, WRA escorted Chris Dellith (USFWS) and Adam Backlin (United States Geological Survey) throughout the Proposed Bank on March 15, 2012. The purpose of the site visit was to assess the habitat for California red-legged frog. During the meeting, both Chris and Adam thought that the most of the ponds within the Proposed Bank would constitute excellent California red-legged frog habitat. In addition, they were both open to the idea of implementing a California red-legged frog translocation program. In early 2012, WRA successfully implemented the first California red-legged frog translocation effort within a proposed conservation bank.<sup>1</sup>

The Sponsor would be willing to conduct the necessary due diligence to support a translocation plan and implement such project as long as the service area for California red-legged frog is large enough to support sales that would recoup the cost of implementing the translocation effort and subsequent monitoring.

\_\_\_

<sup>&</sup>lt;sup>1</sup> WRA translocated CRLF eggs into restored ponds located in Solano County during early 2012. To date the eggs have hatched and a large proportion of tadpoles have metamorphosed into juveniles. WRA is currently monitoring the juvenile population; they are currently thriving and expected to be breed onsite in 2013 or 2014. The translocation effort took place in Solano County and the Sacramento USFWS has agreed that the translocation effort would generate conservation bank credits. We are currently finalizing the bank enabling instrument with the assistance of the Sacramento USFWS. The Sacramento USFWS office has recommended a service area that covers portions of 17 counties in Northern California. Another California red-legged frog bank approved in the Sierra Nevada foothills covers 22 counties.

Since the species has significantly declined and is nearly extirpated in Southern California, it is unlikely that mitigation for this species would be required in the vicinity of the Proposed Bank. Moreover, Mr. Dellith and Mr. Backlin felt that this site could be an ideal translocation site that could re-establish a large California red-legged frog population in Southern California.

Therefore, in order to support a translocation effort it is recommended that the service area for the California red-legged frog be the coastal counties within the jurisdictional limits of the Ventura USFWS office (See **Figure 18**) This includes the Counties of Los Angeles (portions of), Ventura, Santa Barbara, San Luis Obispo (portions of), Monterrey, San Benito, and Santa Cruz.

The species is much more prevalent north of Ventura County. Impacts to California red-legged frog along the Central Coast would be directed to the Proposed Bank to help support the re-establishment of a population in Southern California where the population is nearly extirpated. In addition, re-establishment of populations in areas where population numbers are in decline are specifically described in the Recovery Plan and would potentially help to delist the species in the future.

#### 4.3.4 Tri-colored Blackbird

Tri-colored blackbird colonies have been documented throughout the Proposed Bank in several marsh habitats in both the eastern, western, and southern regions of the property. This species has been observed utilizing the cattail marshes and riparian habitat associated with several of the large ponds within the Proposed Bank. There is a very large grasshopper population onsite and the entire property is within the foraging range from the breeding locations within the Proposed Bank. Therefore, the Sponsor is proposing to provide tri-colored blackbird credits to offset impacts to the species' nesting and foraging habitat.

#### 4.3.5 Other Special Status Species

Other special status species that may be present within the Proposed Bank such as Least bell's vireo, southwestern willow flycatcher, Riverside fairy shrimp, and alkali mariposa lily will be discussed in the Final Prospectus if these species are determined to be present onsite during the completion of the biological resources inventory.

#### 5.0 CREDITING METHODOLOGY

Where overlapping resources exist, one acre could be credited for various credit types, such as native grasslands, wetland buffer areas, and Swainson's hawk foraging habitat (for example). This triple stacked credit could be sold to one project proponent to offset their impacts to these three resources. Additional credit types may also be possible, and will be determined during the completion of protocol surveys. Furthermore, the Sponsor would have the option of selling stacked credits for just one of the credit types; however, stacked credits cannot be decoupled with each of the credits being sold to different customers. This crediting methodology allows the Sponsor to either sell stacked credits to applicants impacting similar resources or to sell stacked credits for a single credit type that is in high demand, such as Swainson's hawk foraging habitat. If the market shifts to other credit types such as wetland or stream buffer then those credits could also be offered as either single or stacked credits.

**Figure 13** includes an example crediting map that illustrates the concept of credit stacking for the Proposed Bank.

#### **6.0 PROPOSED SERVICE AREAS**

The service areas in which the Sponsor proposes to offer credits is discussed below by credit type.

## 6.1 Wetland, Stream, Riparian Service Areas

The Proposed Bank is divided between two watershed areas, the Santa Clara River watershed, and The Antelope Valley-Fremont Valley watershed. **Figure 14** illustrates the full extent of both watershed regions, in relation to the location of the Proposed Bank.

The Sacramento District of the Army Corps of Engineers released their final guidance for the establishment of service areas for the Sacramento District in October 2010 (Corps 2010). While this Proposed Bank is located in the Los Angeles District, this guidance, being the most recent guidelines published for the establishment of Service Areas provided by the Corps was followed.

These guidelines call for the establishment of service areas based on a watershed approach as outlined in the Mitigation Rule (33 CFR Parts 325 and 332). The guidelines define watershed as the area delineated by the ten-digit Hydrologic Unit Code (HUC-10). The guidelines also state that the HUC-10 in which the Proposed Bank is located is the starting point for developing a service area and that additional HUC-10's should be added using justifications based on the sub-basin (HUC-8) and ecoregion needs. For eco-region, the guidance recommends using the United States Department of Agriculture's Major Land Resource Areas (MLRA).

#### 6.1.1 Santa Clara River Watershed Service Area

The western portion of the Proposed Bank is located in the Castaic Creek HUC-10 which is in the upper reaches of the Santa Clara River sub-basin (HUC-8). The Castaic Creek watershed is in the Southern California Mountains MLRA, an area characterized by steep mountains and valleys and streams with actively eroding channels. The sediment contributed by streams and washes in this MLRA create colluvial slopes and alluvial fans in the larger valleys and on the coastal plains to which they drain.

The Santa Clara River sub-basin, which the Proposed Bank is partially located in, originates in the Southern California Mountains and drains onto the Coastal Plain and into the Pacific Ocean near Ventura in Pierpont Bay, just 3-miles from the mouth of the Ventura River. The sediments entering the ocean in this bay is the primary source of sand for beaches from Los Angeles south (USDA 2006). Altered hydrology, sand and gravel mining have reduced the amount of sediments entering this bay and are resulting in severe beach erosion for southern California communities.

The improved function and services provided by the created and restored aquatic resources in the Proposed Bank will help to improve the functions and services of the Santa Clara River and Pierpont Bay. As such, the proposed service area for 404 and 1602 impacts include all the HUC-10s that are located in the portions of the Southern California Mountains and Coastal Plains MLRA which drain into Pierpont Bay (**Figure 14**). These include the following watersheds (HUC-10): Castaic Creek, Bouquet Canyon, Headwaters Santa Clara River, Upper Santa Clara River, Upper Piru Creek, Lower Piru Creek, Middle Santa Clara River, Sespe Creek, Ventura River, Los Sauces Creek, and Lower Santa Clara River.

# 6.1.2 Antelope-Fremont Valley Watershed Service Area

The eastern portion of the Proposed Bank is located in the Amargosa Creek HUC-10 which is in the upper reaches of the Antelope-Fremont Valley sub-basin (HUC-8). The Amargosa Creek watershed is in the Southern California Mountains MLRA, an area characterized by steep mountains and valleys and streams with actively eroding channels. This portion of the Southern California Mountains MRLA drains inland towards the adjoining Mohave Desert MRLA region. The Antelope-Fremont Valley watershed is

situated between the Tehachapi and San Gabriel Mountains, and constitutes the western tip of the Mojave Desert, extending into south-eastern Kern County, and the western edge of San Bernardino County. This area includes the cities Palmdale and Lancaster in Los Angeles County, and the other communities such as Rosamond in Kern County. A large number of renewable energy projects, including solar and wind energy development are planned or under construction throughout this watershed.

#### 6.2 CEQA Sensitive Habitats

The proposed service area for sensitive habitats and species covered under CEQA is based on the distribution of similar habitat types and species. Habitat types in the region were mapped using land cover data generated by the USDA Forest Service (CALVEG 2004) and the distribution of these habitat types was used to determine the limits of the Service Area. The proposed service area covers all of Los Angeles County, the south-eastern portion of Kern County, and includes the full extent of the Antelope-Fremont Watershed (HUC-8) (**Figure 15**).

The Proposed Bank's unique location means that the service area for CEQA and special status species will cover both the inland foothills of the Transverse Ranges, and the eastern foothills of the Tehachapi Range, in both Los Angeles, and Kern Counties.

Additional sensitive habitat and special status species service areas may be determined in the future, following the additional documentation of the resources present within the Proposed Bank.

#### 6.2.1 Agricultural Soils

The proposed service area for agricultural soils, including Prime Farmland and Farmland of Statewide Importance is the same as the proposed CEQA service area, as shown in **Figure 15**. Since mitigation for impacts on agricultural lands would only be a requirement under CEQA, the service area for these resources would be the same. The Antelope Valley contains a number of areas designated as Prime Farmland or Farmland of Statewide Importance. Similar designated agricultural resource lands exist in a number of rural areas across Los Angeles County as well.

#### 6.3 Swainson's Hawk

The proposed service area for Swainson's hawk is the entire breeding range of this species within the Antelope Valley, which is consistent with the recommendations released by the California Energy Commission and CDFG in 2010. The limits of this area are defined in the west by the ridge line of the Tehachapi Mountains which separates the Central Valley breeding populations of Swainson's hawk from the Antelope Valley populations, in the east by the San Bernardino County line, in the north by Highway 58, and in the south by the limits of the Antelope-Fremont Valleys watershed and includes the portion of the Santa Clara River watershed that is located north of the limits of the ANF (**Figure 16**).

#### 6.4 Burrowing Owl

The proposed burrowing owl service area would cover the desert populations of these species within the Antelope Valley, Mojave River, and Coyote-Cuddleback Lakes watersheds (**Figure 17**).

#### 6.5 California Red-Legged Frog

If USFWS is interested in pursuing a translocation program within the Proposed Bank similar to what has been completed in Solano County, the Sponsor feels that a large service area would be needed in order to support such an effort. This is primarily due to the fact that the California red-legged frog has been nearly extirpated from Southern California and most of the populations within the jurisdiction of the Ventura USFWS office are along the Central Coast. Therefore, the Sponsor proposes that the

service area for California red-legged frog be the coastal counties within the jurisdictional limits of the Ventura USFWS office (**Figure 18**) This includes the Counties of Los Angeles (portions of), Ventura, Santa Barbara, San Luis Obispo (portions of), Monterrey, San Benito, and Santa Cruz. This is much smaller than the service area for other California red-legged frog banks within the State of California.

#### 6.6 Tri-Colored Blackbird

The proposed service area for the tri-colored blackbird is the entire County of Los Angeles and the Antelope Valley (Figure 19).

#### 7.0 BANK OPERATION

# 7.1 Credit Approvals and Accounting

The Bank will be entitled through the Corps', EPA's, and CDFG's Mitigation and Conservation Banking programs. It is also proposed that the Los Angeles and Lahontan Regional Water Quality Control Boards be signatories to the Proposed Bank. These agencies have developed interagency templates that enable a property to be entitled as both a wetland and stream mitigation bank as well as a habitat and species conservation bank. Although the CDFG banking program is currently halted, it is expected that the program will be reinstated in the Spring of 2013. The following elements are recommended to be incorporated into the Proposed Bank's enabling instrument:

- Tracking of all credit types within the Army Corps' RIBITS database
- Separate accounting for aquatic resource credits within the Santa Clara River and Antelope Valley watersheds
- Detailed tracking of all credit transactions and frequent reporting to the signatory agencies

# 7.2 Project Phasing

The Proposed Bank consists of 94 parcels across 3905.4 acres. It is anticipated that conservation easements will be issued sequentially across the site, depending on demand. A preliminary phasing map is included as **Figure 20**. This preliminary phasing plan includes up to 8 and may be modified by the Sponsor during the bank review process. Phase 1 is comprised of the valley floor of the property, and is proposed as a formal mitigation/conservation bank, and will contain a majority of the wetland establishment, restoration, and enhancement areas. The remaining phases will be developed according to demand for the habitat and species resource credits associated with each phase.

# 7.3 Bank Ownership

At this time, it is proposed that the Proposed Bank will continue to be owned by the Sponsor. The conservation easement will be held by a non-profit or governmental entity. The easement holder has not been determined at this time. A long-term monitoring/maintenance and management of the Proposed Bank will be conducted by a qualifying entity with experience in the Proposed Bank's habitats and as acceptable to the IRT.

#### 8.0 PROJECTED REGIONAL DEMAND

Currently there are is only one wetland mitigation bank that covers a portion of the Proposed Bank's service area. Furthermore, this bank (Santa Paula Mitigation Bank) only offers preservation credits. There are no other wetland or species conservation credits available for sale in the Proposed Bank's service areas. Given ongoing large-scale public and private development in the region and significant potential impacts, demand for bank credits is anticipated. WRA has analyzed the ORMS<sup>2</sup> records for the Santa Clara Watershed and has estimated that in the past, around 15 acres of Army Corps jurisdictional areas have been impacted on average every year.

In addition, there are significant impacts to wetlands, sensitive natural communities and Swainson's hawk habitat currently occurring, or projected to occur in the Antelope Valley. There are no historical records readily available for wetlands impacts in this area, however anecdotal evidence shows that the recent boom in the development of wind and solar energy plants has increased the impacts on desert washes, riparian habitats and wetlands. Foraging and breeding habitat for Swainson's hawk is also being dramatically impacted and some planning agencies believe that there will not be enough land available in the Antelope Valley to mitigate for those impacts. There is no conservation or mitigation bank currently servicing the Antelope Valley. This shows that there is an urgent need for a new mitigation and conservation bank that would provide both Swainson's hawk and desert wash credits in this region.

\_

<sup>&</sup>lt;sup>2</sup> Database maintained by the Corps of Engineers

#### 9.0 REFERENCES

- Army Corps of Engineers (Corps) 2010. Public Notice of Service Area Final Guidance for Mitigation Banks and In-lieu Fee Programs Operating in the U.S. Army Corps of Engineers, Sacramento District.
- CDFG 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California. June, 2, 2010.
- CDFG 2012. Staff Report on Burrowing Owl Mitigation. State of California, Natural Resources Agency, Department of Fish and Game, March 7, 2012.
- CALVEG, [ESRI geodatabase]. (2007). McClellan, CA: USDA-Forest Service, Pacific Southwest Region, Remote Sensing Lab (2011).
- GeoResource Management. 2012. Evaluation of Mineral Potential, Proposed Petersen Ranch Conservation Bank. Sections 1, 2, 11 & 12, T.6N., R 14W. Section 6, T. 6N., R13 W. Sections 27, 33, 34, & 35, T. 7N., R. 14 W. San Bernardino Meridian, Los Angeles County, California.
- Holland, R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Prepared for the California Department of Fish and Game, Sacramento, California.
- Sawyer, J.O. and T. Keeler-Wolf. 2009. A Manual of California Vegetation 2<sup>nd</sup> ed. California Native Plant Society.
- Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian v-2.html
- United States Department of Agriculture (USDA) 2006. Major Land Resource Areas Online Explorer. www.soils.usda.gov. Accessed July 2012.



